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THE DEVELOPMENT OF A COMMUNICATION ASSESSMENT PARADIGM FOR USE WITH TRADITIONALLY UNDERSERVED DEAF ADULTS

Greg Long
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Within the congenitally deaf population there exists a sizeable number of individuals who are considered to be *traditionally underserved*. These individuals are characterized by severe communication deficits irrespective of modality (e.g., speech, sign language, reading, writing). Unfortunately, there are few evaluators, and fewer assessment protocols, available to assess the communication skills of this population. Addressing this issue, this paper will describe this population, discuss limitations associated with current communication assessment strategies, and subsequently provide a model to structure communication assessment built upon a functionally based, ecological perspective.

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Within any evaluation setting one of the foremost issues to be addressed centers upon the characteristics of the individual being assessed. For example, differences in ethnicity and socioeconomic status exert significant impact on the applicability of specific assessment instruments. The issue of diversity as affecting the evaluation situation is compounded with the addition of disability considerations. This is particularly true with individuals who are deaf. There are precious few evaluators who are knowledgeable regarding the cultural, social, educational, and linguistic differences found within the deaf population. In those rare instances when skilled evaluators are available they must often struggle to use and/or adapt assessment instruments designed for individuals who hear. Consequently, even those deaf individuals who are well educated, successful, and possess strong language and communication skills are often handicapped within evaluation settings due to a dearth of skilled evaluators and appropriate assessment instruments.

Assessment concerns within the deaf population assume particular relevance when considering traditionally underserved persons who are deaf. These are individuals who have historically been referred to as *low functioning, low achieving, multiply handicapped, hearing*

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impaired developmentally delayed, severely handicapped deaf, and disadvantaged deaf (Dowhower & Long, 1992). Within this article the authors will use the term *traditionally underserved* as it is a less pejorative term that places the onus for the problem in the service delivery system rather than upon the individual with the disability.

In a survey of over 1,700 professionals, Dowhower and Long (in press) reported that traditionally underserved persons who are deaf are perceived by professionals as being unable to communicate effectively with others irrespective of modality (i.e., reading, writing, speech, speech reading, sign). In addition, these individuals are described as having concomitant deficits in the areas of vocational readiness, independent living, social skills, and/or academic achievement. Specifically, they are seen as:

- a. unable to obtain or maintain competitive employment without assistance;
- b. experiencing difficulty carrying out daily living tasks without supervision and guidance from others;
- c. showing a tendency for poor social skills (e.g., aggressive, impulsive, low frustration tolerance, poor problem solving skills); and
- d. having reading and math achievement scores at the third grade level or below.

Though exact prevalence figures are currently unavailable, previous estimates put this number at over 100,000 deaf individuals (COED, 1988). Perhaps more important than a specific prevalence estimate is the likelihood that these individuals will be the typical consumers seen within vocational rehabilitation, independent living, and mental health settings. Mathay and LaFayette (1990) sought to determine the percentage of “low achieving” deaf persons using various social service agencies within the Pacific Northwest. Using classification criteria similar to that of Dowhower and Long (in press), these authors found that 50 %–90% of the deaf persons being served within these settings were identified as “low achieving.”

Needless to say, the variety of skill deficits experienced by this population present significant challenges when conducting assessments. Based upon clinical experience and a thorough literature review, the area of communication assessment is particularly lacking. Specifically, Reiman and Bullis (1987) conducted a bibliographic review of measurement procedures with deaf and hard-of-hearing individuals and found no published data that focused on communication assessment with underserved deaf adults. This is ironic as deafness, particularly as experienced by these individuals, is primarily a disability of communication. Given that communication deficits are the hallmark characteristic of this

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population (Dowhower & Long, 1992; Larew, Long & Mittal, 1993), it would seem logical to focus attention on developing and subsequently validating a model to assess their communication skills. In response to this call, the remainder of this paper will describe the initial efforts toward the development of a communication assessment model at the Northern Illinois University Research and Training Center on Traditionally Underserved Persons Who Are Deaf. Discussion will initially center upon a description of traditional strategies and measures used for communication assessment. The limitations of these approaches for use with underserved deaf people will then be highlighted. Finally, a model will be presented that argues for the need to view communication assessment with this population from an ecologically based framework that focuses on functional communication skills.

Traditional Communication Assessment Approaches

Communicative competence can be defined by how successful individuals are in both understanding the needs of listeners and adjusting their message to convey it (Sternberg, 1991). Within this context communication can be best defined as the transmission of information or ideas from one individual to another. It should be noted that this transmission need not rely upon the formal use of speech or language. In fact, among all language users, a significant percentage of communicative intent is transmitted nonverbally through body position, eye gaze, or head nodding. These nonverbal behaviors merely represent another form of communication. Therefore, a thorough communication assessment must examine the forms that an individual uses and how effectively the individual uses verbal and non-verbal forms to communicate.

Historically, communication assessment has been conducted under the purview of speech-language-pathologists. Using interviews, standardized and non-standardized procedures, and observations, these professionals make clinical decisions to (a) determine the presence or absence of a communication disorder; (b) confirm assessments, diagnoses, observations by other professionals; (c) provide prognostic information; (d) provide information to be used in planning appropriate skills development opportunities; and e) evaluate progress in an intervention program. The first three objectives are primarily oriented toward identifying pathology. This type of "diagnostic" approach tends to focus on the individual's deficits with little attention directed toward a description of strengths

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and assets. An additional limitation of the diagnostic model is that it focuses solely on the individual's communication disorder and does not address how the disorder affects other aspects of the individual's life or the impact the disorder may have on other persons in the individual's life. As such, a diagnostic approach to communication assessment has minimal relevance for traditionally underserved persons who are deaf. In contrast, the last two rationales (i.e., providing intervention goals and evaluating progress) are more in keeping with the goals of communication assessment as discussed in this paper. These rationales call for a focus on the individual's strengths as well as an enumeration of weaknesses in order to develop an appropriate habilitation plan.

Limitations to Traditional Assessment Strategies

Traditional strategies to assess communicative competence place a heavy emphasis on formal assessment (i.e., the use of a standardized test or instrument). The vast majority of these instruments tend to be norm-referenced. However, when used with traditionally underserved deaf adults, there are significant questions raised concerning the representativeness of the standardization sample. For example, the majority of formal communication assessment measures used with both hearing and deaf adults were originally designed to assess children who are language impaired but otherwise without additional sensory deficits (Leonard, Prutting, Perozzi & Berkley, 1978). Extensive use of assessment instruments that were designed for children further complicates the process because the instruments are unlikely to assess the communication skills needed to function in adult vocation, leisure, and family settings. Standardized tests also rarely provide for a comprehensive sampling of an individual's functional language skills (Moeller, 1988) and, as a consequence, have minimal prescriptive value. Furthermore, due to a limited number of items and potential practice effects, standardized tests have little utility for measuring improvement with this population.

A related concern with traditional communication assessment strategies is their emphasis upon administration within clinical or office settings. Following the evaluation, inferences are typically drawn with respect to anticipated generalizability to other settings. This approach has significant limitations for underserved deaf adults. Virtually every setting places different communication demands on the individual. Language use also varies as a function of the setting, participants, and topic (Erickson & Omark, 1981). As applied

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with this population, the assumption of generalizability is highly suspect.

A final concern regarding the use of formal assessment measures with traditionally underserved deaf adults relates to the heterogeneity of this population. Many of the communication challenges these individuals face are exacerbated by additional cognitive and behavioral difficulties. In light of this diversity, it is unrealistic to assume that communication samples gained via standardized formats adequately represent the full range of skills potentially available to these individuals.

Although a thorough review of the literature was conducted, the authors were unable to identify any technically adequate, standardized communication tests for use with underserved deaf adults. This is not surprising given the issues previously raised. For example, it would be difficult, if not impossible, to provide test instructions in a standardized manner across individuals. Communication considerations with this group require that existing instruments often be adapted on an individual basis by changing the mode of presentation, by eliminating or modifying certain test items, or by changing the scoring procedures. Without these alterations, one would be much more likely to measure limitations than abilities. Unfortunately, each of these acts violates standardization procedures.

A willingness to alter and/or modify a test instrument may well lead to the inappropriate use of a particular instrument with this population. This was exemplified in a study of test use conducted by Abraham and Stoker (1988). The authors identified the Peabody Picture Vocabulary Test (PPVT, Dunn & Dunn, 1981) as the assessment instrument most frequently used to test the communication competence of secondary level hearing-impaired students. Unfortunately, the authors did not distinguish between test use with deaf versus hard-of-hearing students. For those students who rely on auditory channels to process information, the PPVT is appropriate; however, for those students who must rely upon a visual means of communication (e.g., speechreading, signs), the PPVT is highly suspect. The latter students must either speechread the evaluator's instructions or try to read, if provided, the evaluator's fingerspelling, signs, or pantomime. Given that the majority of respondents in that study stated that they used speech rather than sign as their primary means of communicating during testing, a concern is raised regarding the likely reduction of scores attained by students who are visually dependent.

Although not specifically developed with traditionally underserved deaf adults in mind, several informal communication assessment instruments exist that may be used with

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deaf people. These are found most often within vocational rehabilitation settings and independent living centers and tend to take the form of communication checklists. There are several major criticisms associated with these measures. First, they are virtually all “homemade.” To the best of the authors’ knowledge, there are no widely disseminated communication checklists or observational procedures designed specifically for underserved deaf adults. Consequently, it is impossible to compare performances across individuals and settings using different checklists.

Another concern regarding the use of informal checklists to assess communication competence is that they are, by their very nature, too global. It is unrealistic to assume that a measure intended to provide a general profile of communication skills and abilities will provide sufficient detail in any one area to serve as a useful basis for planning an intervention program (Sarno, 1969).

A final concern centers around the reliability of the assessor. Most professionals trained to conduct communication evaluations (e.g., speech-language pathologists, educators, psychologists) have minimal experience, instruction, or skill across the range of communication modalities used by traditionally underserved deaf adults. Consequently, the typical “assessor” is frequently a sign language interpreter. Though certified interpreters are fluent communicators, they often have no professional training related to assessment and receive minimal supervision during their evaluations.

Interestingly, those professionals most adept at communication assessment (i.e., speech-language pathologists) appear to have little interest in conducting assessments with underserved deaf adults. The authors presented the content of this article at the 1992 national conference of the American Speech Language and Hearing Association held in San Antonio, Texas. Out of a program that featured more than 300 presentations, workshops, and poster sessions, the authors’ presentation was the only one that focused on communication assessment with congenitally deaf adults. When audience members were queried regarding their apparent lack of interest in this population, they replied that communication assessment of deaf adults was the responsibility of the vocational rehabilitation system. Not surprisingly, this attitude leaves traditionally underserved deaf adults without access to appropriate communication assessment because vocational rehabilitation professionals typically do not have the technical expertise to conduct comprehensive communication assessments.

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Development of a Model for Communication Assessment

The essential problem in communication assessment with traditionally underserved deaf adults is that appropriate instruments do not exist and that evaluators have not been trained to conduct assessments in the absence of appropriate instruments (Reavis, 1990). In an effort to address this rather abysmal state of affairs, a new paradigm is being proposed. This paradigm borrows heavily and appropriately from the fields of speech-language pathology and special education and emphasizes assessment as a means to individualize subsequent intervention activities. It further provides for the subsequent development of interventions built around an individual's strengths.

The fields of speech-language pathology and special education possess a rich literature base regarding communication assessment strategies with persons who are severely disabled. Though the authors do not intend to imply similarity between traditionally underserved deaf adults and those individuals with severe disabilities, there are at least three fundamental principles underlying approaches used with persons with severe disabilities that have clear applicability to underserved deaf adults. These principles include:

- Target functional skills.
- Adopt an ecologically based approach.
- View the assessment as a collaborative experience.

By using these concepts in concert with knowledge and awareness of the implications of deafness, an evaluation team should be in a strong position to assist actively the traditionally underserved deaf adult in attaining greater control and independence in his or her life.

Target Functional Skills

The foremost objective in conducting communication assessments with traditionally underserved deaf adults is to target functional communication skills (i.e., those skills most useful in terms of meeting an individual's environmental and communication demands). This requires that skills identified for assessment be age-appropriate. Part of the assessment challenge for the evaluator, then, is to determine what communication skills the individual will need as an adult.

An emphasis on functional communication skills centers attention on the

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individual's communicative successes with correspondingly less attention on the mode of communication. Within this paradigm, it is irrelevant whether an individual uses pantomime, sign, or speech as long as he or she are able to convey effectively his or her intent. Functional assessment also requires the involvement of others (e.g., peers, family members, work supervisors) and settings other than the traditional clinic or office environment. The authors contend that it is impossible to develop functional assessment targets without considering the individual's living arrangements, social support network, physical characteristics, and vocational needs. For example, it would be an ineffective use of resources to assess an underserved deaf adult's ability to read a bus schedule if he or she lived in a rural setting where there is no public transportation available.

A major advantage to adopting a functional approach to assessment is that it provides a logical progression from evaluation to intervention (Calculator & Bedrosian, 1988). A knowledge of the individual's communication skills across settings and interactants provides invaluable data for the development of intervention goals.

Adopt an Ecologically Based Approach

In conducting communication assessments with underserved deaf adults, it is recommended that the evaluation identify site-specific communication requirements and supports. To be successful in a particular setting, it is crucial that one understand the communication skills needed for that specific context. There are clear language differences between environments, and the assessment must identify the forms and words needed in specific work, home, and community settings (Calculator & Bedrosian, 1988). Communication assessment is relative and varies depending on both the communicative repertoire of the individual and factors related to his or her environment. This approach allows the individual's abilities to be viewed in terms of the environmental demands made on him or her. (Dormandy & van der Gaag, 1989). It should be emphasized, however, that this perspective is not meant to denigrate the importance of generalizability across settings. Rather, for those individuals with severely limited communication skills, it will likely prove most effective to delineate clearly the focus of assessment and subsequent intervention steps.

To the extent that one can assess and subsequently intervene to provide a better communicative match between individuals and their environments, the greater the

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likelihood that beneficial outcomes will follow. This concept is adapted from Holland's (1985) theory regarding person-environment fit relative to vocational choice. Specifically, the more congruent individuals are with their environments the more reinforcement they will receive. A congruent environment provides increased opportunities for the individual to develop and display skills and interests similar to others within their environment. Greater congruence leads to greater stability.

A question arises concerning how best to assess the communicative demands of a particular environment. The specific approaches recommended herein highlight the use of environmental analyses and social validation strategies. An ecological orientation to assessment requires a simultaneous focus on both the individual and the environment (Apter, 1982). Because individuals and their environments are in dynamic interaction with each other, an individual cannot be understood apart from the system of which he or she is a member. Unfortunately, there are no standardized instruments available for use with underserved deaf adults for this purpose (i.e., to assess the degree to which an individual's behavior will fit the demands of a particular environment). Until one is available, we must undertake an informal, albeit systematic, analysis of the environment in question.

A discussion of environmental assessment might best be served by way of illustration. Within a particular work environment, for example, environmental analysis involves identifying the tasks of a position and determining the functional communication demands placed on the employee by the task and the work environment (Yuspeh, 1982). The evaluator must determine the various components of the job, where they are performed, the major activities associated with each component, and the specific skills required for each activity (Browder, 1991). After the evaluator has observed the job being performed, he or she then attempts to obtain communication-related input from others who have detailed knowledge about the job (e.g., supervisors, co-workers and/or current employees who perform similar jobs). This helps to minimize the possibility of overlooking communicative activities that occur irregularly or those of lesser importance (Yuspeh, 1982). These activities should provide the evaluator with a detailed analysis of the specific communicative demands of a specific work environment.

Social Validation

Conducting a thorough environmental analyses should allow the evaluator to

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generate an extensive list of communicative demands within specific settings. The problem with this approach, however, is that one may develop a list that is too extensive. It will therefore be necessary to establish priorities. It is recommended that prioritization be accomplished through a social validation strategy (Kazdin, 1977; Wolf, 1978). This is a methodology used regularly within applied behavioral analysis to obtain input regarding the social acceptability of specific training programs (Kazdin & Matson, 1981). It was developed in response to the need to identify specific skill and performance areas within rehabilitation. A component of this approach, subjective evaluation (Kazdin, 1977), is particularly well suited for prioritizing communicative demands. Using this approach, the opinions of individuals most familiar with a particular environment are solicited. This process allows the evaluator to determine which skills should receive the greatest attention during assessment and subsequent intervention.

Although not focused on prioritizing communication demands, an outstanding example of this approach was documented in a study conducted by Rusch, Schultz, and Agran (1982). Using a subjective evaluation procedure, Rusch and his colleagues sought to identify "entry-level survival skills" for food service, janitorial, and maid service occupations. After adapting a questionnaire that identified important communication, social, and vocationally relevant skills, a group of experts representing these service occupations were asked for their review and feedback. Following this review the resulting questionnaire was mailed to 120 employers in the food, janitorial, and maid service occupations for their feedback. Through this process a list of socially validated, prioritized skills was determined.

An emphasis on ecological assessment has the added benefit of providing information to plan potential environmental accommodations. It is unrealistic to assume that the burden of meeting the communication demands of a particular environment should fall exclusively on the underserved deaf adult. A wide variety of assistive technology is currently available to assist deaf and hearing persons communicate more effectively. Included in this technology are vibrating pagers, TTYs, and assorted flashing alarm systems. Environmental accommodations need not be limited to technology. The assessment of any particular environment will identify other participants and *natural supports* within that setting. Successful school, workplace, and community accommodations have been enhanced by implementing disability awareness classes as well as sign language instruction to supervisors and co-workers. Providing communication-focused accommodations to assist

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underserved deaf adults will undoubtedly enhance their likelihood of success.

View the Assessment as a Collaborative Experience

Effective communication evaluation requires the examiner to have a high level of competence across the communication modalities presented by the underserved deaf adult. As noted earlier, many professionals do not have these skills. As such, it is important that the evaluation be conducted as a team effort. One individual should be responsible for the overall assessment design, data summary, and analysis, and other team members can then take responsibility for making observations to describe the individual's communicative competencies. Functioning as an evaluation team also allows each person to contribute his or her unique expertise as well as expand the assessment base over an array of interactional contexts (Johnson, 1988).

Collaboration during the assessment process should also entail the participation of the individual being assessed. Though it is recognized that many traditionally underserved deaf adults may have minimal insight into their communication needs, it is critical that they be made an active participant in the process. This involvement not only enhances their personal investment in the assessment process, but may also have a positive impact on their desire to set goals and change personal behavior (Bransford & Stein, 1984). This philosophy of inclusion is also congruent with the paradigm of Participatory Action Research (Whyte, 1990) as promoted by the National Institute on Disability and Rehabilitation Research that stresses the involvement of persons with disabilities in research that affects them.

Specific Assessment Strategies

Conducting communication assessments that are ecologically based and target functional goals is a potentially daunting task. No single instrument or procedure exists that will provide a complete assessment of an underserved deaf adult's communicative competence. An evaluator must be willing to assess different aspects of communication using a variety of methods and recognize that each will reveal different strengths and weaknesses. Ideally, as just discussed, communication assessments with underserved deaf adults will be undertaken as part of a team approach. The most effective evaluations are likely to be those that include multiple components conducted by multiple assessors over time.

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The first component of a communication assessment of a traditionally underserved deaf adult should center upon a delineation of the individual's strengths, weaknesses, and limitations in terms of preexisting cognitive, sensory, and motor skills. Additional data to be collected should include, at a minimum, background information related to type, level, and onset of the hearing loss, educational history, and any past or current employment. Given the communication deficits exhibited by these individuals, it is likely that this information will need to be obtained by interviews with significant others or through a review of the individual's case file.

A second assessment strategy is to conduct brief interviews with those individuals most familiar with the underserved deaf adult across multiple settings (e.g., family members, friends, social service professionals, co-workers). These interviews should focus on identifying situations and environments wherein the underserved deaf adult is most likely to demonstrate his or her communication skills. Specifically, in what settings does the individual tend to have the greatest success? Does there appear to be a communication modality in which the individual appears to be most successful? And finally, are there particular topics or activities that tend to elicit greater numbers of communicative exchanges (Johnson, 1988)? Again, it is recognized that traditionally underserved deaf adults will, in general, possess communication skills deficits across individuals and environments. On the other hand, if discrepancies from this pattern exist, they can then be incorporated into the assessment and subsequent intervention processes.

The third, and for purposes of this paper, final assessment strategy to incorporate is that of observing the individual within the environment of interest. As has been stressed throughout this paper, it is impossible to understand the communicative abilities of traditionally underserved deaf adults without reference to the specific environment(s) of interest. Literature within special education and, more specifically, applied behavior analysis, is replete with descriptions of formal approaches to observational assessment. These approaches, however, have focused strongly on use with individuals who possess severe disabilities and may, therefore, have limited use with traditionally underserved deaf adults. On the other hand, many of these procedures could be modified or used less formally as a part of this process. One caution should be noted. Even if observations are conducted informally it is important to conduct them in a systematic fashion. Johnson (1988) suggested that communication assessment via observation answer the following five questions:

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1. What is the conversational task (i.e., what is he or she communicating)?
2. What modalities are being used to engage in conversation (i.e., how is he or she doing it)?
3. Was the individual successful in conveying his or her intent?
4. What was/were the topic(s) included in the conversational exchange?
5. How many turns were taken by the individual and his or her interactional partner (i.e., who did most of the work to be sure meaning was understood)?

Summary

Communication assessment with traditionally underserved deaf adults is an area of significant need. Unfortunately, there are few evaluators, and even fewer formal measures, to assist in this process. Adapting methodology from the fields of speech-language pathology and special education, a paradigm for communication assessment was presented that emphasized three essential characteristics of this process. The first highlighted the need to target functional communication skills (i.e., those skills necessary for the individual to met his or her environmental and communication demands). The second called for the adoption of an ecological approach to assessment. In working with this population it is crucial that one understand the communication skills needed for specific contexts. This emphasis allows an individual's abilities to be viewed in terms of the environmental demands made on them. The third characteristic to be recommended was the development and use of a team approach when conducting communication assessments. Included in this effort should be the active participation of the underserved deaf adult to the greatest extent possible. Following a discussion of communication assessment characteristics, specific suggestions were offered regarding background, interview, and observation data to be incorporated into the evaluation. As has been emphasized throughout this paper, there is significant diversity among the population of traditionally underserved deaf adults. By adopting assessment strategies built on an ecologically based, functional assessment paradigm, it should be possible to structure evaluation processes that are far more tailored and subsequently effective for the unique needs of individuals within this population.

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Future Directions

The suggestions presented within the paper form the basis of a comprehensive communication assessment protocol being developed by the Northern Illinois University Research and Training Center on Traditionally Underserved Persons Who Are Deaf. Initial work has been completed on the collection and review of currently identified communication assessment measures used across a variety of populations. Efforts are also underway to develop detailed guidelines for the evaluation of environmental communication demands and subsequent prioritization of these demands. It is anticipated that a final version of this measure will be available for dissemination in late spring 1995. For additional information regarding this protocol or to be added to the NIU-RTC mailing list please contact the authors at the following address:

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